Superfund Records Center
SITE: NUTMEG VALLEY
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OTHER: 457351

Five-Year Review Report

for

Nutmeg Valley Road Superfund Site

Wolcott,

New Haven County, Connecticut

SDMS DocID 457351

September 2009

PREPARED BY:

United States Environmental Protection Agency
Region 1
Boston, Massachusetts

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Office of Site Remediation and Restoration
United States Environmental Protection Agency, Region 1

9/21/09
Date

TABLE OF CONTENTS

TABLES

FIGURES

ATTACHMENTS

LIST OF ACRONYMS AND ABBREVIATIONS

ACRONYM	DEFINITION
ARAR	Applicable or Relevant and Appropriate Requirement
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act, 42 USC §§ 9601 *et seq.*
CT DEP	Connecticut Department of Environmental Protection
EPA	United States Environmental Protection Agency
HQ	hazard quotient
ICZ	Institutional Control Zone (established under Groundwater Ordinance #87)
µg/L	micrograms per liter
mg/kg-d	milligrams per kilogram per day
mg/L	milligrams per liter
NCP	National Contingency Plan, 40 CFR Part 300
NPL	National Priorities List
OSWER	EPA's Office of Solid Waste and Emergency Response
PCBs	polychlorinated biphenyls
ROD	Record of Decision
SVOCs	semi-volatile organic compounds
VOCs	volatile organic compounds
USGS	United States Geological Survey

EXECUTIVE SUMMARY

This five-year review report was prepared for the Nutmeg Valley Road Superfund Site located in Wolcott, New Haven County, Connecticut. The size of the study area has changed over time but the remedial investigation focused on a 28-acre area bounded by Wolcott Road (Route 69) on the northwest, Old Tannery Brook to the east and its unnamed intermittent tributary to the south. The Site and surrounding area is rural with mixed commercial, industrial and residential use. A dozen small manufacturing, light industrial facilities and repair shops are separated by wooded lots. Public water is available to everyone on site; however a handful of residential properties along Wolcott Road rely on private wells for domestic use. Industrial use of the area began in the late 1940's. Historical information indicates that years of on-site disposal, spills and leaks of chemical waste including solvents, paints, cyanide, heavy metals and oil occurred on the commercial properties. Aerial photographs show historical surface impoundments, stained surface soils and scrap metal debris.

EPA made the determination that conditions at the Site do not present an unacceptable risk to human health and the environment now or in the future and issued a "No Further Action" Record of Decision (ROD) for the Site in September 2004. This determination was based on a) an emergency removal of 1,150 tons of electroplating waste sludge and contaminated soil and b) existing state and local laws that prevent exposure to contaminated groundwater. The Nutmeg Valley Road Superfund Site was deleted from the National Priorities List in September 2005.

This is the first five-year review for the Site. The requirement for conducting five-year reviews is incorporated in Section121(c) of CERCLA 42 § 9621(c). Depending on the selected remedial action, the five-year review may be required by statute or conducted as a matter of EPA policy. A review can also be conducted at the discretion of EPA at any time. Because no remedial actions were taken under CERCLA, this is a discretionary five-year review. As stated in the ROD, this review was limited in scope to evaluating whether the legal mechanisms (or similar requirements) in place at the time of the ROD remain in place, and whether these mechanisms function sufficiently to prevent human exposure to contaminated groundwater. This review is being conducted five years from issuance of the ROD in 2004.

This five-year review concluded that the remedy is currently protective. Groundwater sampling will be conducted to confirm future protectiveness.

Five-Year Review Summary Form

SITE IDENTIFICATION		
Site name *(from WasteLAN)*: Nutmeg Valley Road Superfund Site		
EPA ID *(from WasteLAN)*: CTD980669261		
Region: I	**State:** CT	**City/County:** Wolcott/New Haven

SITE STATUS	
NPL status: □ Final ☒ Deleted □ Other (specify)	
Remediation status (choose all that apply): □ Under Construction □ Operating ☒ Complete	
Multiple OUs? □ YES ☒ NO	**Construction completion date:** 9/28/2004
Has site been put into reuse? □ NO ☒ YES	

REVIEW STATUS	
Lead agency: ☒EPA □ State □ Tribe □ Other Federal Agency	
Author name: Karen Lumino	
Author title: Remedial Project Manager	**Author affiliation:** EPA Region I
Review period: 11/24/2008 to 9/17/2009	
Date(s) of site inspection: 4/16/2009	
Type of review: □ Post-SARA □ Pre-SARA □ NPL-Removal only □ Non-NPL Remedial Action Site □ NPL State/Tribe-lead ☒ Regional Discretion	
Review number: ☒ 1 (first) □ 2 (second) □ 3 (third) □ Other (specify)	
Triggering action: □ Actual RA Onsite Construction □ Actual RA Start □ Construction Completion □ Previous Five-Year Review Report ☒ Other (specify) Record of Decision	
Triggering action date *(from WasteLAN)*: 9/28/2004	
Due date *(five years after triggering action date)*: 9/28/2009	

Five-Year Review Summary Form, cont'd.

Issues:

None

Recommendations and Follow-up Actions:

None

Protectiveness Statement(s):

The remedy is currently protective. Groundwater sampling will be conducted for the next five-year review to confirm future protectiveness.

Other Comments:

Residential soil risk The risks of direct exposure to soil to future residents were not evaluated because residential use is not allowed by current zoning regulations. If zoning or expected land use changes from industrial/commercial to residential, it is recommended that the risks of direct soil contact for the hypothetical future resident be quantified using soil data from the remedial investigation.

Manganese migration in groundwater The risk of residential ingestion of manganese in groundwater at the Site was higher than EPA risk management criteria (HQ ≥ 1). This elevated manganese was probably caused by biodegradation of organic contaminants which depleted oxygen in the groundwater and allowed natural iron and manganese in the soil matrix to dissolve into the groundwater. Groundwater sampling will be conducted for the next five-year review to confirm that concentrations of manganese and other metals along with 1,4-dioxane[1] are not increasing outside the Institutional Control Zone (ICZ) where potable use of groundwater is permitted. If these contaminants are found to be migrating beyond the ICZ at concentrations that pose an unacceptable human-health risk, EPA will work with state and/or local officials to evaluate additional institutional controls or other measures.

[1] 1,4-dioxane was not included in EPA's previous sampling events.

SECTION 1.0
INTRODUCTION

This five-year review report is for the Nutmeg Valley Road Superfund Site (the "Site") located in Wolcott, Connecticut (Figures 1 and 2). The purpose of this five-year review is to determine whether the remedy selected for the Site is protective of human health and the environment. The methods, findings, and conclusions of this review are documented in this five-year review report. In addition, five-year review reports identify issues found during the review, if any, and present recommendations to address them.

EPA Region I has conducted this five-year review pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the National Contingency Plan (NCP). Section 121(c) of CERCLA 42 USC § 9621(c) states:

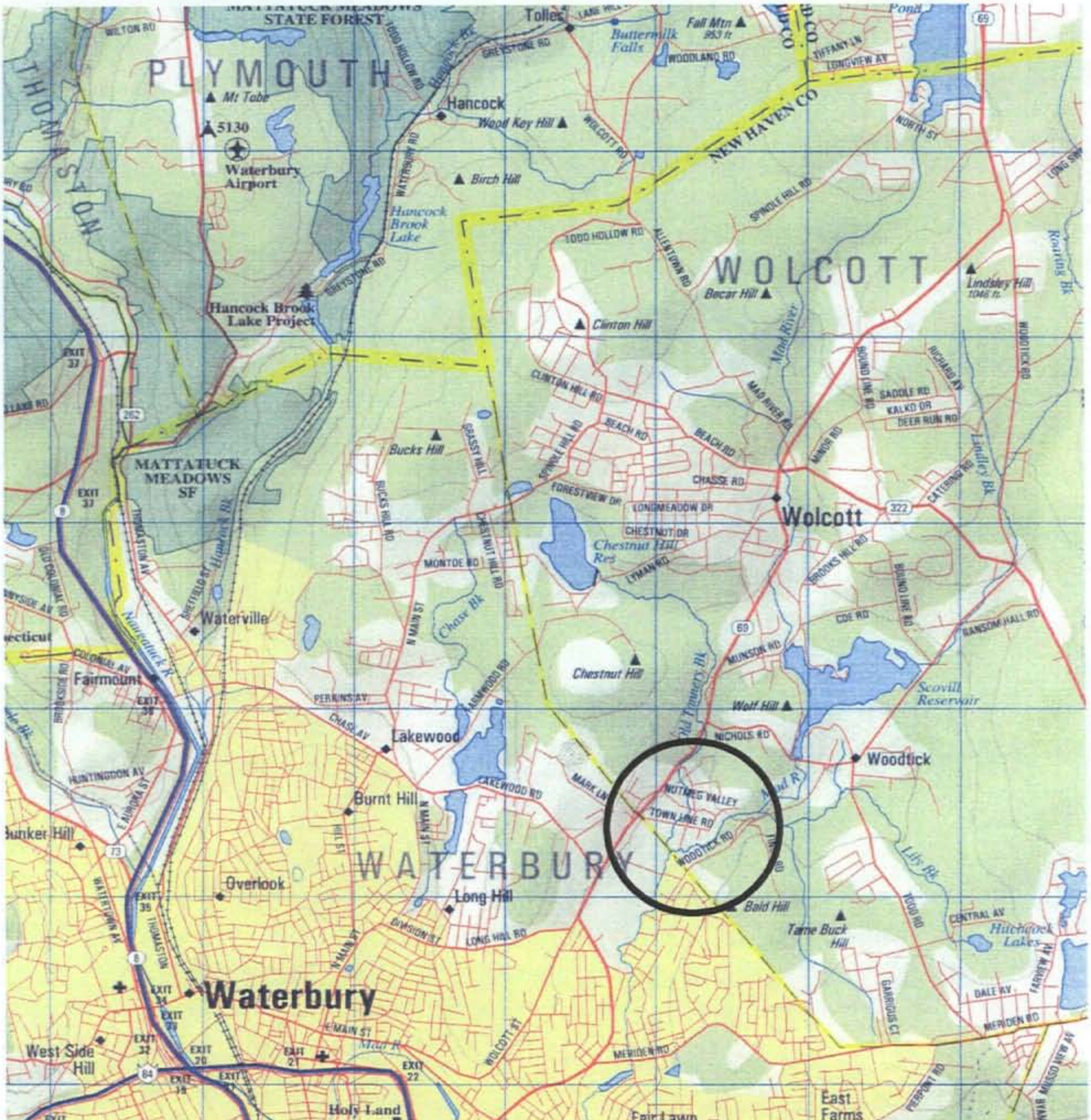
> *If the President selects a remedial action that results in any hazardous substances, pollutants, or contaminants remaining at the site, the President shall review such remedial action no less often than each five years after the initiation of such remedial action to assure that human health and the environment are being protected by the remedial action being implemented. In addition, if upon such review it is the judgment of the President that action is appropriate at such site in accordance with section [104] or [106], the President shall take or require such action. The President shall report to the Congress a list of facilities for which such review is required, the results of all such reviews, and any actions taken as a result of such reviews.*

The Agency interpreted this requirement further in the NCP; 40 CFR §300.430(f)(4)(ii) states:

> *If a remedial action is selected that results in hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure, the lead agency shall review such action no less often than every five years after the initiation of the selected remedial action.*

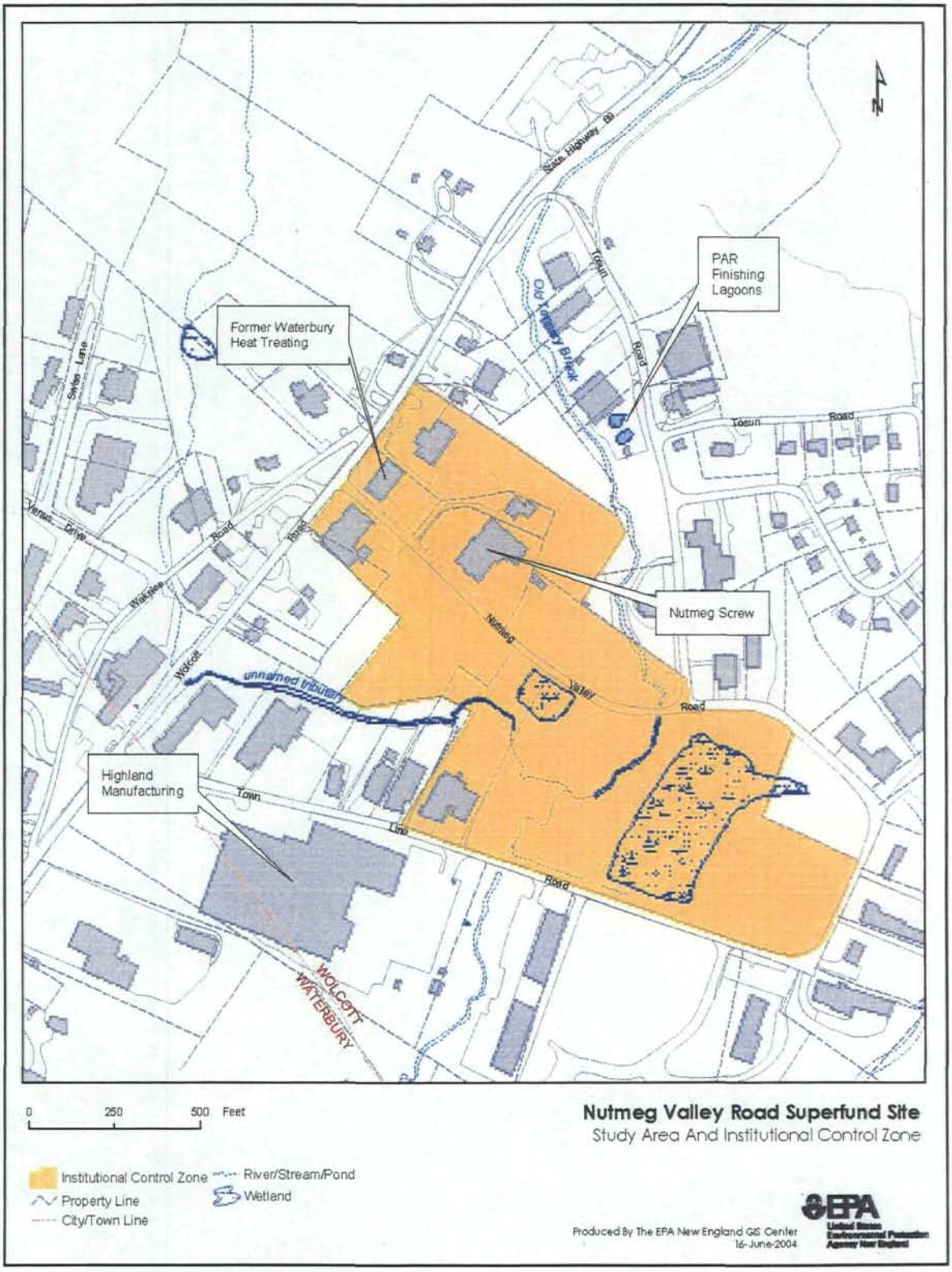
This is the first five-year review for the Nutmeg Valley Road Superfund Site. A "No Further Action" Record of Decision (ROD) was issued in September 2004. Because no remedial actions were taken at this Site by EPA under CERCLA, this is a discretionary five-year review. As stated in the ROD, this review was limited in scope to evaluating whether the legal mechanisms (or similar requirements) in place at the time of the ROD remain in place, and whether these mechanisms function sufficiently to prevent human exposure to contaminated groundwater. This review is being conducted five years from issuance of the ROD. The Site was deleted from the National Priorities List in September 2005.

Figure 1



STATE FOREST
PLYMOUTH
Mt Tobe
Waterbury Airport
Hancock
Wood Key Hill
Birch Hill
Hancock Brook Lake
Hancock Brook Lake Project
Tolles
Buttermilk Falls
Fall Mtn
NEW HAVEN CO
WOLCOTT
Becar Hill
Clinton Hill
Lindsley Hill
Mad River
MATTATUCK MEADOWS SF
Bucks Hill
Chestnut Hill Res
Wolcott
Waterville
Fairmount
Chestnut Hill
Scovill Reservoir
Wolf Hill
Woodtick
Lakewood
Burnt Hill
Bunker Hill
WATERBURY
Overlook
Long Hill
Bald Hill
Tame Buck Hill
Hitchcock Lakes
Waterbury
West Side Hill
Holy Land
Fair Lawn
East Farms
Town Plot Hill
NUTMEG VALLEY
TOWN LINE RD
WOODTICK RD

Figure 2


PAR
Finishing
Lagoons
Former Waterbury
Heat Treating
Nutmeg Screw
Highland
Manufacturing
Old Towne Brook
State Highway 69
Town
Road
Swiss Lane
Venus Drive
Wakelee
Wolcott
unnamed tributary
Nutmeg
Valley
Road
Town
Line
WOLCOTT
WATERBURY
0
250
500 Feet
Nutmeg Valley Road Superfund Site
Study Area And Institutional Control Zone
Institutional Control Zone
Property Line
City/Town Line
River/Stream/Pond
Wetland
Produced By The EPA New England GIS Center
16-June-2004
EPA
United States
Environmental Protection
Agency New England

SECTION 2.0
SITE CHRONOLOGY

The chronology of the Site, including all significant site events and dates is included in Table 1. Additional events and details are provided in Section 3.0, Background.

TABLE 1. CHRONOLOGY OF SITE EVENTS

DATE	EVENT
Late 1940's	Industrial use of the area began.
1979 - 1981	Groundwater contamination in private wells discovered by state and local health officials.
1984 - 1985	Additional private drinking water wells found to contain volatile organic compounds (VOCs).
1986	Waterbury public water line extended into Wolcott to service the affected area; some upgradient domestic use and industrial use of the groundwater on site continues.
January 22, 1987	Site proposed for the National Priorities List (NPL).
August 1987	EPA finds VOCs in industrial wells and one residential well; CT Department of Environmental Protection (CT DEP) provides residents with bottled water.
March 31, 1989	Site listed on the NPL.
1992	1150 tons of sludge waste and contaminated soil removed by EPA from PAR Finishing on Tosun Road.
1995	United States Geological Survey (USGS) conducts first regional groundwater study.
1996	EPA performs preliminary ecological risk assessment; more sampling is recommended.
1998	USGS conducts second regional groundwater study.
2000 - 2002	EPA conducts remedial investigation to determine the nature and extent of contamination; performs human-health and ecological risk assessments.
April 2004	Town of Wolcott adopts an ordinance that prohibits all uses of groundwater on affected parcels in the study area.
June 2004	Contaminated aquifer determined to be of "low use and value" by CT DEP.
July 2, 2004	Administrative record, including the remedial investigation and risk assessments, made available to the public.
July 8, 2004	Proposed plan identifying EPA's preferred remedy presented to the public.
July 9, 2004	Start of 30-day public comment period on proposed plan.
August 5, 2004	Public hearing to accept verbal comments on proposed plan.

DATE	EVENT
September 28, 2004	"No Further Action" Record of Decision issued by EPA
July 12, 2005	Compliance with local groundwater ordinance certified by an official for the Town of Wolcott.
August 5, 2005	Notice of intent to delete the Site published in the Federal Register; start of public comment period.
September 6, 2005	Closing date for comments on the notice of intent to delete.
September 23, 2005	Site deleted from the NPL.
March 6, 2009	Press release announcing start of five-year review.
April 16, 2009	Site inspection and interviews with local officials and property owners.
September 10, 2009	Official for the Town of Wolcott certifies continued compliance with local groundwater ordinance.

SECTION 3.0
BACKGROUND

3.1 PHYSICAL CHARACTERISTICS AND LAND AND RESOURCE USE

The Nutmeg Valley Road Superfund Site (the "Site") is located in west-central Connecticut near the Wolcott/Waterbury town line, in New Haven County, Connecticut (Figure 1). The size of the study area has changed over time, but the remedial investigation focused on a 28-acre area bounded by Wolcott Road (Route 69) to the northwest, Old Tannery Brook to the east, and its unnamed intermittent tributary to the south (Figure 2).

Topographically, the Site lies within the small river basin of the Mad River. Much of the interior portion of the Site is located on kame terrace deposits, composed principally of sand and gravel. The kame terrace slopes steeply towards the two on-site streams that flow along the terrace base. Flood plain deposits of alluvial silts and sand containing organic material abut the kame terrace deposits. The bedrock is Taine Mountain Formation, consisting of well-foliated gneiss, granofels, and local pegmatite sills. Depth to bedrock is 10 to 25 feet.

Surface water flows towards the Site from the north and northwest to Old Tannery Brook and the unnamed stream, and eventually exits the Site flowing south to the Mad River. Groundwater flow in the overburden aquifer is southeast towards the confluence of Old Tannery Brook and its tributary. Groundwater flow in the bedrock has a more southerly component than the overburden, in the direction of Mad River.

The current land use is industrial and commercial with some residential use along Wolcott Road. A dozen small manufacturing facilities, light industrial facilities and repair shops are separated by wooded lots. Public water is available to everyone in the study area however, a handful of the residential properties along Wolcott Road continue to rely on private wells (upgradient of contaminated groundwater) for domestic use. Old Tannery Brook and its intermittent tributary are overgrown with trees and bushes and slow moving. The Waterbury sanitary landfill (North End Disposal Area) is located approximately ½ mile northwest and upgradient of the Site.

Past and present human disturbances (filling, soil removal, roadways, building construction, etc.) have altered the landscape on site, offering minimal wildlife habitat. A palustrine wetland system consisting of a mixture of forested, scrub/shrub and emergent wetlands is associated with the two on-site streams. The wetlands are relatively less disturbed, and their proximity to the upland edge habitat provide foraging, cover and breeding areas for a variety of birds, mammals, fish, reptiles and amphibians. No known federal or state endangered, threatened or special concern species were identified at the Site.

The reasonably-anticipated future use of the Site will continue to be industrial, commercial and limited residential. All the properties at the Site are privately owned. An ordinance adopted by the Town of Wolcott in April 2004 prohibits all uses of groundwater on a number of parcels in the study area. The parcels impacted by the groundwater ordinance are zoned either industrial or general commercial. The residential properties are unaffected by the ordinance and are located upgradient of the groundwater contamination at the Site. The expectation is that groundwater on those residential properties will

continue to be used for domestic purposes into the foreseeable future. The public water supply line runs directly in front of those parcels, so the opportunity to tie-in to public water is available.

Town officials have targeted the area for revitalization efforts intended to stimulate commercial/industrial growth and increase the Town's tax base. The deletion of the Site from the National Priorities List (NPL) in 2005 is expected to significantly contribute to that revitalization goal. In the past, property owners have reported that the stigma of being associated with a Superfund site has made it difficult to obtain financing from banks or sell property. Revitalization efforts include major improvements to infrastructure (e.g., streets, guardrails, etc) and housekeeping (e.g., one-time pickup of debris on the properties, free paint).

3.2 HISTORY OF CONTAMINATION

Industrial use of the area began in the late 1940's. Historical information indicates that years of on-site disposal, spills and leaks of chemical waste including solvents, paints, cyanide, heavy metals and oil at industrial and commercial properties have occurred. Aerial photographs show historical surface impoundments, stained surface soils and scrap metal debris.

Groundwater contamination was first discovered by state and local health officials in several private drinking water wells in 1979. Metal-working and machine shops on Nutmeg Valley Road with a known history of dumping waste oil and solvents onto the ground (Nutmeg Screw Machine Products, Waterbury Heat Treating and Alpine Electronic Components) were the focus of EPA's early investigations. Later, the study area was expanded to 155 acres encompassing industrial facilities along Swiss Lane, Venus Drive, Tosun Road, Town Line Road, and Wolcott Road (Route 69) that used similar manufacturing and chemical processes and were also viewed as potential sources of groundwater contamination.

3.3 INITIAL RESPONSE

In response to the discovery of VOCs in private drinking water wells and a hazardous waste inventory conducted by the CT DEP, a study of groundwater contamination in Wolcott was conducted by CT DEP, CT Department of Health Services and Chesprocott Health District from 1979 to 1981. Results indicated that several wells in the vicinity of Nutmeg Screw Machine Products had VOCs (tetrachloroethylene, trichloroethylene, benzene) present above EPA's then current Suggested No Adverse Response Levels. In 1984 and 1985, Chesprocott Health District received preventative health block grants to fund a water supply testing program. Approximately 39 wells were sampled in Wolcott, the majority of them located along Route 69 (one to two miles northeast of Nutmeg Screw Machine Products) and Town Line Road (800 feet southwest of Nutmeg Screw). Results confirmed the presence of groundwater contamination. At that time, there was no public water supply available to the residents of Wolcott. In 1986, the Town of Wolcott extended the water line from neighboring Waterbury to the affected areas including Nutmeg Valley Road and Town Line Road. Some domestic and industrial use of the groundwater continued.

EPA proposed the Site for the NPL in January 1987, and it was listed in March 1989. In August 1987, EPA found VOCs in several industrial wells and one residential well. CT DEP provided the residents with bottled water. In 1992, EPA conducted an emergency removal at the PAR Finishing facility on Tosun Road. Approximately 1,150 tons of sludge waste and contaminated soil were removed from two unlined lagoons and shipped to a disposal facility in Michigan. This action addressed the threats posed by the electroplating wastes in surface soils, and removed a potential point source to groundwater contamination.

In 1995 and 1998, the United States Geological Survey (USGS) performed regional groundwater studies. In comparing the findings of the two studies, the USGS concluded that: a) although VOCs, metals and cyanide were found in the groundwater, their distribution was scattered and there was no evidence of a wide-spread plume of contamination; and b) the levels of contaminants in much of the study area were decreasing over time through natural degradation processes. EPA screened the data collected by USGS for human-health and ecological risk and, after consultation with CT DEP, concluded that additional samples were needed to properly assess risk.

From 2000 to 2002, EPA collected samples of groundwater, soil, surface water and the sediment in streams and wetlands, and performed human-health and ecological risk assessments. It was determined that groundwater, if consumed, could potentially be a health hazard due to high concentrations of manganese. Because no one was currently drinking water from the affected areas, the risk was a future one. EPA also determined based on the risk assessments that the study area could be reduced to its current 28-acre configuration.

In April 2004, the Town of Wolcott adopted an ordinance that established an Institutional Control Zone (ICZ) (Figure 2) in which all uses of groundwater are prohibited. All parcels where groundwater was shown to pose a potential human-health risk were included in the ICZ. The ordinance required all affected landowners to tie-in to the public water supply system, and, provide certification that all production wells had been formally abandoned.

In June 2004, CT DEP made the determination that the contaminated aquifer in the ICZ is of "low use and value". With the concurrence of CT DEP, EPA no longer considered restoration of the aquifer to drinking water quality to be an objective of the cleanup program at this Site.

In July 2004, EPA proposed that no further remedial actions be taken at the Site under CERCLA. The Record of Decision was issued in September 2004. In July 2005, EPA received certification from town officials that there was full compliance with the groundwater ordinance. In September 2005, the Site was removed from the NPL.

3.4 BASIS FOR ACTION TAKEN AT THE SITE

The following summarizes the contaminants detected at the Site, as identified in the remedial investigations and during subsequent investigations and summarized in the Record of Decision.

Soil. After the emergency removal at PAR Finishing in 1992, the soil investigation in 2000 focused on two properties on Nutmeg Valley Road where there was a known history of dumping solvent waste and cutting oils on the ground. Surficial soil samples (0 to 1 foot) and subsurface soil samples (1 to 10 feet) were taken at these locations. Background soil samples were taken from a parcel immediately across Wolcott Road, outside of the study area. All samples were analyzed for the presence of VOCs, semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), pesticides, metals and cyanide.

A broad range of low levels of VOCs, SVOCs, PCBs, pesticides, and metals were detected in background surficial and subsurface locations, as was cyanide. In the study area, isolated occurrences of polycyclic aromatic hydrocarbons, and other SVOCs, and four metals (arsenic, copper, lead and zinc) were found at elevated levels. However, the sampling results showed no obvious distribution pattern or clustering of

contamination on the two properties that is indicative of an ongoing, major source of contamination. Rather, the distribution closely resembled patterns found at background locations and is more likely the result of vehicle maintenance and/or small spills of materials which are common in an industrialized area. EPA concluded that these conditions do not pose an unacceptable health risk. In some instances, however, the concentrations do exceed state standards and may require additional cleanup under Connecticut's Property Transfer Law.

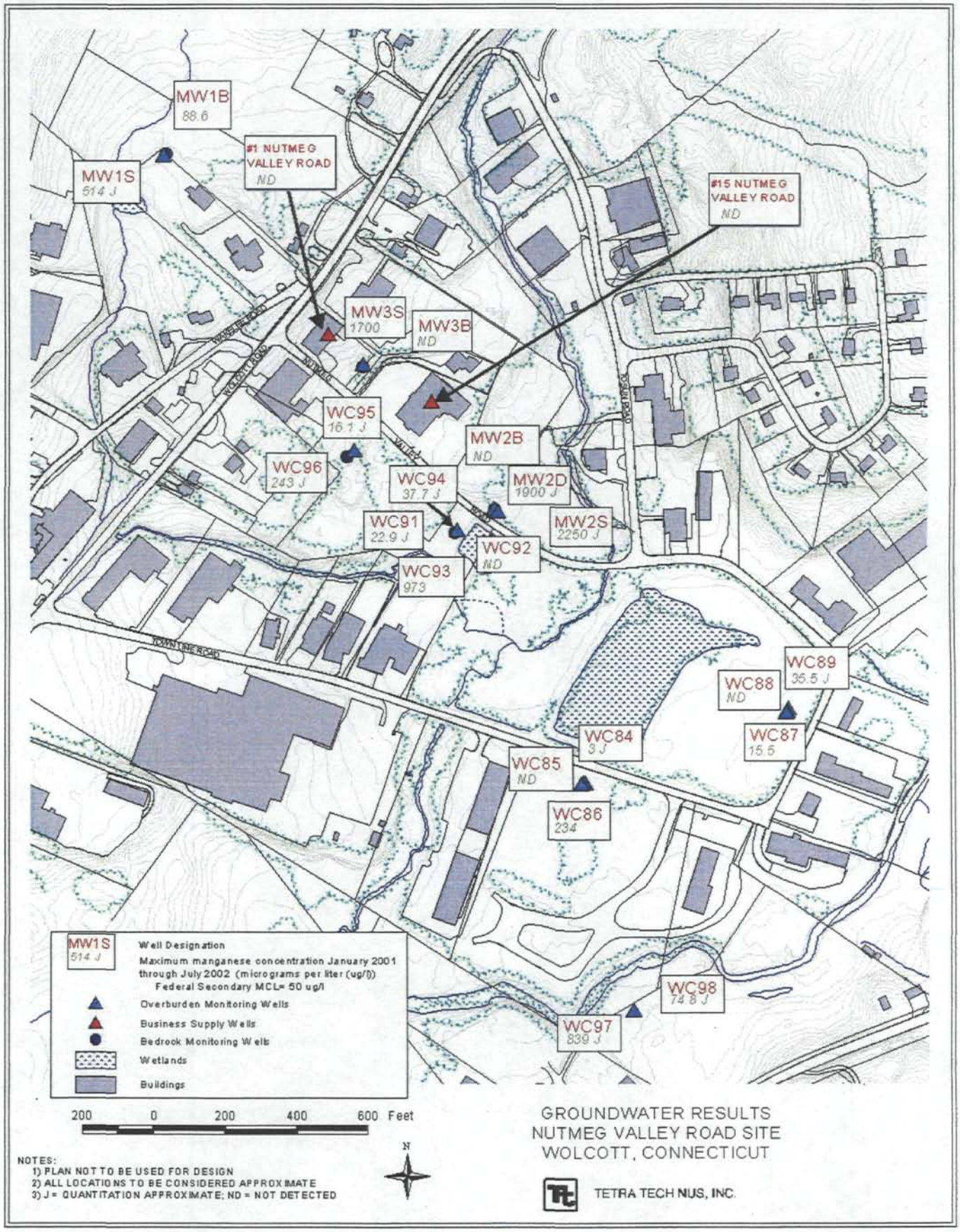
Groundwater. In 1995 and 1998, the USGS performed regional groundwater studies. VOCs, metals and cyanide were detected in the groundwater, however, only VOCs at three locations were found to exceed federal safe drinking water standards. In comparing the findings from these two studies, the USGS concluded that: a) the distribution of the contamination was not indicative of a wide-spread plume of contamination in the study area: and b) the levels of contaminants in much of the study area were decreasing over time through natural degradation processes. A small plume of groundwater contamination was found in the overburden and bedrock aquifers at the southern edge of the USGS' study area. This plume is being addressed by the Highland Manufacturing Company under Connecticut's property transfer program. Contamination was also found in wells that are upgradient of the Site, but downgradient of the landfill in Waterbury. Under the terms of a consent order with the State of Connecticut, the City of Waterbury is required to monitor for and address groundwater contamination that is associated with the landfill.

Based on the findings of the USGS regional groundwater studies, EPA narrowed the focus of remedial investigations to the current 28-acre study area. From 2000 to 2002, EPA collected groundwater samples from both the overburden and bedrock aquifers in the study area for the purpose of assessing human-health and ecological risk. Samples were taken from eleven monitoring wells and two business water supply wells on three separate occasions. Samples were also taken from ten monitoring wells in up- and cross-gradient locations to determine the background conditions for this area. All the samples were analyzed for the presence of VOCs, SVOCs, pesticides, PCBs, metals and cyanide.

Samples taken from background wells indicated elevated levels of the following metals - aluminum, iron, manganese, chromium and nickel. None of the other analytes (VOCs, SVOCs, PCBs, and cyanide) were found in significant concentrations in background locations. Samples taken from within the study area were found to have low levels of VOCs, pesticides, metals and cyanide. Only iron and manganese were detected in study area groundwater at higher levels. The manganese was found to present a future human-health risk; the iron does not.

Because the bedrock in this area is naturally rich in manganese, EPA considered the possibility that the elevated levels of manganese may be indicative of natural conditions. However, a comparison of the data shows that concentrations of manganese inside the study area (208 to 2250 parts per billion) are roughly three times higher than background concentrations (88 to 839 parts per billion). The disposal of waste oils and solvents on the ground surface can create a condition in the subsurface in which biodegradation of the contaminants lowers dissolved oxygen in groundwater and dissolves manganese and other metals from underlying rock, which allows them to enter the groundwater. These factors suggest that the presence of manganese in high concentrations can be tied to industrial activities within the study area. The sampling locations are shown on Figure 3.

Figure 3


MW1B
88.6
#1 NUTMEG VALLEY ROAD
ND
MW1S
514 J
#15 NUTMEG VALLEY ROAD
ND
MW3S
1700
MW3B
ND
WC95
16.1 J
MW2B
ND
WC96
243 J
WC94
37.7 J
MW2D
1900 J
WC91
22.9 J
MW2S
2250 J
WC92
ND
WC93
973
TOWNLINE ROAD
WC89
35.5 J
WC88
ND
WC84
3 J
WC87
15.5
WC85
ND
WC86
234
WC98
74.8 J
WC97
839 J
MW1S
514 J
Well Designation
Maximum manganese concentration January 2001 through July 2002 (micrograms per liter (ug/l))
Federal Secondary MCL= 50 ug/l
Overburden Monitoring Wells
Business Supply Wells
Bedrock Monitoring Wells
Wetlands
Buildings
200 0 200 400 600 Feet
N
NOTES:
1) PLAN NOT TO BE USED FOR DESIGN
2) ALL LOCATIONS TO BE CONSIDERED APPROXIMATE
3) J = QUANTITATION APPROXIMATE; ND = NOT DETECTED
GROUNDWATER RESULTS
NUTMEG VALLEY ROAD SITE
WOLCOTT, CONNECTICUT
TETRA TECH NUS, INC.

Sediment and Surface Water. Surface water and sediment samples were taken from Old Tannery Brook, its unnamed tributary and their associated wetlands; locations upgradient of the study area, and one location downgradient of the study area. All samples were analyzed for the presence of VOCs, SVOCs, pesticides, PCBs, metals and cyanide.

A broad range of VOCs at low levels were detected in surface water in upstream, downstream and study area sampling locations. Elevated levels of phthalates were detected at one study area location and the downstream location. Elevated levels of metals were found in surface water in upstream, downstream and study area locations. In addition, elevated levels of VOCs, SVOCs, pesticides, PCBs and metals were found in sediment in upstream, downstream and study area locations.

The contaminants found in sediment and surface water do not pose a threat to human health at the concentrations detected. They do, however, pose an ecological risk that ranges from negligible to low or moderate, depending on the contaminant. Because the type and level of contamination upstream, downstream and in the study area are relatively the same, the Site does not appear to be a significant source of contamination. Instead, it appears that this is an area of wide-spread historical contamination, not limited to a particular source or site and therefore, not actionable under the Superfund program.

Summary of Human Health Risks. EPA evaluated the potential for current and future risks to nearby residents, adolescent trespassers, and commercial and construction workers from direct contact with the contaminants found in soil (including inhalation), sediment, and groundwater at the Site. Old Tannery Brook and its unnamed tributary are overgrown with trees and bushes, slow moving, and generally uninviting to people. For purposes of the risk assessment, the only potential exposure to surface water was assumed to be the occasional adolescent trespasser. The levels of organic compounds and metals that were detected in the soil, sediment and surface water do not appear to pose an unacceptable risk to human health. EPA did identify a potential non-carcinogenic health risk from the *future* use of groundwater as drinking water due to high levels of manganese. The results of a baseline human-health risk assessment performed in 2002 are summarized in the table below.

Table 2
Summary of Human-Health Risks (2002)

Environmental Medium	Exposure Assumptions	Risk
groundwater	commercial and construction workers, and nearby residents or future on-site residents, will use well water for drinking and bathing	non-carcinogenic hazard potential due to manganese
soil	adult commercial and construction workers will touch and ingest or inhale soil	acceptable
surface water	adolescent trespassers (ages 7 to 17) will wade in the streams and wetlands on site	acceptable
stream and wetland sediment	adolescent trespassers (ages 7 to 17) will touch or ingest sediment	acceptable
air	adult commercial and construction workers will breathe in dust	acceptable

Summary of Ecological Risks. The ecosystems potentially at risk from the contaminants found on site are Old Tannery Brook, its unnamed tributary and their associated wetlands. The environmental media of concern are surface water and sediment. Sediment-dwelling (benthic) invertebrates, fish, plants, and suspended organisms like algae are directly exposed to contaminants. The food chain pathway for fish and benthic invertebrates was also considered because bioaccumulating chemicals were found during the remedial investigation. Although the streams may support populations of fish, the small sizes and low flow rates of the streams make it unlikely that fish other than minnow-sized species would be abundant. Also, the reaches of these streams in the study area are relatively small. These characteristics preclude the need to consider the potential risk to fish-eating wildlife, such as mink or kingfishers.

The results of a baseline ecological risk assessment performed in 2001 are summarized in Table 3. The data suggest that plants and animals in upstream, study area and downstream locations may be negatively impacted by contamination. It also indicates that much of the contamination detected at the Site is also present at upstream locations, in most instances at higher concentrations than that found on site or at downstream locations. No contamination was found on site that presented a high risk to ecological receptors. Where contamination was found at higher levels on site than at upstream locations, the on-site levels presented a low level of risk.

Table 3
Summary of Ecological Risks (2001)

Location	Medium	VOCs	PAHs	Phthalates	Pesticides	PCBs	Metals
Upstream (combined)	surface water	-	-	-	-	-	++
	sediment	+	+++	+	++	-	+
	fish tissue	NB	++	NB	-	-	++
Study Area	surface water	na	-	+	-	-	++
	sediment	+	++	+	++	+	+
	fish tissue	NB	+	NB	-	-	++
Downstream	surface water	-	-	++	-	-	+
	sediment	+	++	-	+	-	+
	fish tissue	NB	+	NB	-	-	+

Key
- : acceptable, or negligible, risk ($HI_{mean} < 1$)
+ : low risk ($1 \leq HI_{mean} < 10$)
++ : moderate risk ($10 \leq HI_{mean} < 100$)
+++ : high risk ($HI_{mean} \geq 100$)
na : no benchmarks available for detected chemicals
HI : Hazard Index
NB : not a bioaccumulating chemical group

SECTION 4.0
REMEDIAL ACTIONS

4.1 REMEDY SELECTION

EPA issued a "No Further Action" ROD for the Site in September 2004. The basis for not taking further response actions under CERCLA is explained below.

The human-health risk assessment identified a potential non-carcinogenic health risk from the future use of groundwater as drinking water based upon high levels of manganese detected in groundwater. In evaluating what steps to take, EPA considered the following:

- Town of Wolcott Groundwater Ordinance #87, effective May 6, 2004. This local ordinance defines an area called the Institutional Control Zone (ICZ) (Figure 2) within which all uses of groundwater are prohibited. The ordinance requires all affected landowners to tie-in to the public water supply system and formally abandon all production wells. The ICZ encompasses all parcels where EPA identified potential non-carcinogenic human-health risks.

- Connecticut Public Health Code (section 19-13-B51m) prevents private wells in the future from being located on parcels that are within 200 feet of a public water supply. All parcels in the ICZ are within 200 feet of an existing public water supply line.

- In June 2004, the State of Connecticut revised the rating of the groundwater in the ICZ to "low use and value".

EPA made the determination that these factors, when considered together, are adequate and provide sufficient safeguards to ensure that human exposure to contaminated groundwater in the future is prevented.

In the case of ecological risk, past industrial activities at the Site do not appear to contribute significantly to risk. Aquatic plants and animals (e.g., fish, crayfish, insects) that live in Old Tannery Brook, its unnamed tributary and their associated wetlands may be negatively impacted by contamination. However, at all but two sampling locations, the ecological risks in the study area were found to be the same as, or less than, the risks found in upstream locations. This indicates that the contamination is wide-spread and that the Superfund Site is not a sole source. Other possible sources of the contamination both upstream and within the study area are run-off from roads, parking lots and lawns treated with chemicals. Sources such as landfills and septic systems can also contaminate groundwater which can then discharge pollutants into surface water.

On the basis of the risk assessments, and existing state and local law, EPA made the determination that no further action under CERCLA is warranted at the Nutmeg Valley Road Superfund Site. However, because this no action determination relied in part upon existing laws, EPA also decided to conduct discretionary reviews of the protectiveness of the no action determination every five years pursuant to 40 U.S.C. § 9621(c) of CERCLA. As stated in the 2004 ROD, these reviews will be limited in scope to evaluating whether these legal mechanisms (or similar requirements) currently in place at the time of the ROD remain in place, and whether these mechanisms function sufficiently to prevent human exposure to

groundwater in the ICZ. If a review indicates that exposure is occurring, EPA may take additional action to determine if such exposure presents an unacceptable risk.

SECTION 5.0
PROGRESS SINCE LAST FIVE-YEAR REVIEW

This section is not applicable because this is the first five-year review for the Site.

SECTION 6.0
FIVE-YEAR REVIEW PROCESS

This section describes the activities performed during the five-year review process and provides a summary of findings.

6.1 COMMUNITY NOTIFICATION AND INVOLVEMENT

On March 6, 2009, EPA issued a press release to the media outlets and 429 people on the Site mailing list announcing that the five-year review was underway. EPA invited members of the community to participate in the review either by agreeing to be interviewed or submitting written comments. EPA received a telephone inquiry from an individual who wanted to know why a specific parcel on Tosun road was excluded from the ICZ. No other members of the public contacted EPA during the period that the five-year review was being conducted. A second press release announcing the outcomes and recommendations of the five-year review will be issued once it has been completed.

6.2 DOCUMENT REVIEW

This five-year review consisted of a review of relevant documents for the Site. See Attachment 3 for a list of documents that were reviewed.

6.3 DATA REVIEW

No new environmental data were collected for this review. Assessment of the protectiveness of the remedy was limited to determining whether the legal mechanisms in place at the time of remedy selection which were deemed adequate by EPA to prevent future human exposure to contaminated groundwater, are still in place and functioning as intended.

- Town of Wolcott Groundwater Ordinance #87, effective May 6, 2004, remains in effect. A recertification of compliance with the ordinance from a local official dated September 10, 2009, is included as Attachment 2. In an email communication to Karen Lumino on October 9, 2008, Lorraine DeNicola, an official with the Chesprocott Health District, confirmed that no new wells have been permitted in the ICZ.

- The Connecticut Public Health Code (section 19-13-B51m) requirement that no new private wells be located on parcels that are within 200 feet of a public water supply has not changed.

- The State of Connecticut has not revised the Groundwater Use and Value Determination dated June 2004, in which the rating of the groundwater in the ICZ was determined to be of "low use and value".

6.4 SITE INSPECTION

A site inspection was performed on April 16, 2009. The following EPA personnel were in attendance: Karen Lumino, Remedial Project Manager; Richard Sugatt, human-health risk assessor, and Cornell Rosiu, ecological risk assessor. A completed site inspection form is included in Attachment 4.

6.5 INTERVIEWS

Karen Lumino met with the Honorable Thomas Dunn, Mayor of Wolcott, on April 16, 2009. Mayor Dunn stated that there is continues to be full compliance with the local ordinance that prohibits all uses of groundwater in the area where elevated levels of manganese were detected by EPA. He also stated that the town had applied to the State of Connecticut for a grant through its Small Town Economic Assistance Program to improve drainage and resurface roads in and around the Superfund site, and to extend the public water line to the residential properties along Tosun Road. During the interview, he brought to EPA's attention a $2 million state-of-the-art greenhouse being built on Tosun Road, a development that he attributed in large part to the delisting of the Nutmeg Valley Road site from the NPL (see article included in Attachment 4).

SECTION 7.0
TECHNICAL ASSESSMENT

This section discusses the technical assessment of the remedy and provides answers to the three questions posed in the EPA guidance for five-year reviews (USEPA, 2001).

7.1 QUESTION A: IS THE REMEDY FUNCTIONING AS INTENDED BY THE DECISION DOCUMENTS?

Yes. The legal mechanisms which at the time of the ROD provided sufficient safeguards to ensure that human exposure to contaminated groundwater is prevented remain in effect. The Town of Wolcott has certified that there continues to be full compliance with its Groundwater Ordinance #87 (Attachment 2).

7.2 QUESTION B: ARE THE EXPOSURE ASSUMPTIONS, TOXICITY DATA, CLEANUP LEVELS, AND REMEDIAL ACTION OBJECTIVES (RAOs) USED AT THE TIME OF REMEDY SELECTION STILL VALID?

Yes.

7.2.1 Review of Human Health Risk Assessments and Toxicity Factors Serving as the Basis for the Remedy

A baseline human-health risk assessment was performed in 2002. EPA evaluated the potential for current and future risks to nearby residents, adolescent trespassers, and commercial and construction workers from direct contact with the contaminants found in soil (including inhalation), sediment, and groundwater at the Site. For purposes of the risk assessment, the only potential exposure to surface water was assumed to be the occasional adolescent trespasser. The levels of organic compounds and metals that were detected in the soil, sediment and surface water do not appear to pose an unacceptable risk to human health. EPA did identify a potential non-carcinogenic health risk from the future use of groundwater as drinking water due to high levels of manganese.

In this five-year review report, the impact of changes in toxicity values on remedy protectiveness has been evaluated. Any changes in current or potential future exposure pathways or exposure assumptions that may impact remedy protectiveness are also noted. In addition, environmental data have been qualitatively evaluated to determine whether exposure levels existing at the Site present a risk or hazard to current human receptors.

Changes in Toxicity

The only change in toxicity values is a change in the cancer slope factor for chloroform, which increased about five-fold from 6.1×10^{-3} at the time of the risk assessment to the current value of 3.1×10^{-2} per mg/kg-d. This means that the cancer risks of chloroform would be increased by about five-fold. Chloroform was a contaminant of potential concern in groundwater but not soil, sediment or surface water. The highest cancer risk for chloroform in the risk assessment was 1.2×10^{-7} for residential use of overburden groundwater. Multiplication of this risk by five would result in a cancer risk of 6×10^{-7}, which is also lower than EPA's acceptable risk range of 1×10^{-4} to 1×10^{-6}. Therefore, this change in toxicity values does not affect the protectiveness of the remedy.

Changes in Exposure Pathways/Assumptions

The exposure assumptions used at the time of remedy selection are still valid for those exposure pathways that were evaluated. The original risk assessment evaluated the future risk of groundwater to residents but did not evaluate the risks of direct exposure to soil to future residents because the most likely future use of the site is that it remains industrial. As a result, the risks of soil contact and inhalation of dust to residential receptors is unknown. The non-cancer risk of future residential use of overburden groundwater was higher than EPA's risk management criteria (HQ ≥ 1), due to manganese. Use of groundwater for any purpose is prevented by institutional controls; however, it is feasible that residential use could occur if the zoning changed. If zoning or expected land use changes, it is recommended that the soil data from the remedial investigation be used to calculate the risks to residential receptors.

The risk assessment evaluated the potential risk of vapor intrusion to indoor air by comparing the concentrations of VOCs in groundwater with Connecticut volatilization criteria, which were not exceeded. For this five-year review, the maximum groundwater VOC concentrations were compared with the screening levels in EPA's 2002 vapor intrusion guidance. The only exceedance of vapor intrusion screening levels was one sample with a measured chloroform concentration of 1 ug/L (see Table 4). Chloroform was not detected in subsequent sampling rounds. The vapor intrusion screening level for chloroform is not based on risk because it is truncated at the maximum contaminant level (80 ug/L); however EPA Region 1 calculated a risk-based screening level of 0.71 ug/L for 1 x 10^{-6} cancer risk. Although 1 ug/L is higher than the vapor intrusion screening level for 1 x 10^{-6} cancer risk, it is lower than the screening level for 1 x 10^{-5} risk (7.1 ug/L). Since the chloroform detection is within the screening levels for EPA's acceptable risk range of 1 x 10^{-6} to 1 x 10^{-4}, it is concluded that there is no potential vapor intrusion issue due to VOCs in groundwater at this Site.

Table 4. Vapor Intrusion (VI) Screening

	February, 2002 [1]		July, 2002 [2]		May & June, 2005 [3]		VI
Chemical	FOD	Maximum Concentration (ug/L)	FOD	Maximum Concentration (ug/L)	FOD	Maximum Concentration (ug/L)	Screening Level [4] (ug/L)
1,1,1-Trichloroethane	1/26	0.5J	2/13	0.2J	0/9	ND	3,100
Carbon disulfide	2/26	0.8J	0/13	ND	0/9	ND	560
Chloroform	2/26	1	0/13	ND	0/9	ND	0.71 [5]
1,1-Dichloroethene	0/26	ND	1/13	0.1J	0/9	ND	1,900
Bromomethane	0/26	ND	1/13	0.16J	0/9	ND	20
cis-1,2-Dichloroethene	0/26	ND	1/13	0.23J	1/9	0.22J	210
Methyl tert-Butyl Ether	0/26	ND	9/13	1.8	4/9	0.68	12,000
Tetrachloroethene	0/26	ND	2/13	0.17J	3/9	0.52	0.55 [5]
Trichloroethene	0/26	ND	1/13	0.29J	1/9	0.27J	2.89 [5]

[1] From Table 3-16, *Draft Data Evaluation*, Tetra Tech NUS, February 2002

[2] From Table 2-1, *Draft Data Evaluation Addendum*, Tetra Tech NUS, December 2002

[3] From Table 2-1, *Draft Data Evaluation Addendum 2*, Tetra Tech NUS, July 2005

[4] From Table 2C, OSWER vapor intrusion guidance, USEPA, November, 2002

[5] EPA Region 1 calculated risk-based screening levels based on 1X 10^{-6} cancer risk

FOD = Frequency of Detection

ND = Not Detected

J = Detected at estimated concentration

Evaluation of Recent Sampling Data

Limited groundwater data were collected in 2005 to support the delisting of this Site. These data were consistent with those collected during the remedial investigation which formed the basis of the no-further action remedy decision.

Summary and Conclusions

Although there has been a change in cancer slope factor and toxicity value for chloroform that increases the cancer risks of chloroform, it still falls below EPA's acceptable risk range of 1×10^{-4} to 1×10^{-6}. Therefore, this change in toxicity values does not affect the protectiveness of the remedy.

As part of this five-year review, the concentrations of VOCs in groundwater were compared with the screening levels in EPA's 2002 vapor intrusion guidance to evaluate the potential risks to indoor air. It was concluded that there is no potential vapor intrusion issue due to VOCs in groundwater at the Site.

The original risk assessment did not evaluate the risks of direct exposure to soil to future residents because the most likely future use of the site is that it remains industrial. If the zoning or expected land use changes, it is recommended that the soil data from the remedial investigation be used to calculate the risks to residential adults and children receptors.

7.2.2 Review of Ecological Risk Assessments and Toxicity Factors Serving as the Basis for the Remedy

The exposure assumptions, ecological receptors and risk-based criteria that were used at the time of the ROD are still valid today.

Since the ROD was signed, there has been publication of new OSWER guidance (USEPA, 2008) that cites the importance of considering groundwater and surface water as a single resource medium. Contaminated groundwater discharge to surface water bodies was evaluated in the ecological risk assessment for this Site.

7.2.3 ARARs Review

EPA issued a No Further Action ROD; thus, EPA did not identify ARARs or To Be Considered standards for this Site.

With respect to groundwater, samples taken from within the study area at the time of the ROD did not exceed promulgated drinking water standards. Since that time, there have been no changes to promulgated drinking water standards with respect to contaminants found in groundwater at the Site. While manganese in the groundwater was found to present a future human health risk, there is no promulgated drinking water standard with respect to manganese[2].

[2] In evaluating planned groundwater sampling for the next five-year review to confirm that manganese is not migrating beyond the area in which groundwater use is prohibited, the Agency will take into consideration its 2004 health advisory for manganese of 0.3 mg/l.

7.3 QUESTION C: HAS ANY OTHER INFORMATION COME TO LIGHT THAT COULD CALL INTO QUESTION THE PROTECTIVENESS OF THE REMEDY?

There is no other information other than that which has been described above that calls into question the protectiveness of the remedy.

7.4 TECHNICAL ASSESSMENT SUMMARY

The remedy is functioning as intended by the ROD.

SECTION 8.0
ISSUES

Based on the activities conducted during this five-year review, no issues were identified.

SECTION 9.0
RECOMMENDATIONS AND FOLLOW-UP ACTIONS

There were no issues identified during this five-year review that require follow-up actions.

SECTION 10.0
PROTECTIVENESS STATEMENTS

The remedy is currently protective.

Future protectiveness will be verified by obtaining new samples for the next five-year review to confirm that groundwater containing elevated levels of manganese is not migrating into areas where potable use of groundwater is permitted.

SECTION 11.0
NEXT REVIEW

The next five-year review for the Nutmeg Valley Road Superfund Site will be completed by September 2014. That review should include:

- Confirmation that the legal mechanisms in place at the time of remedy selection, which were deemed adequate by EPA to prevent human exposure to contaminated groundwater, are still in place and functioning as intended.

- Review of groundwater data collected from outside and downgradient of the Institutional Control Zone, as established by local ordinance in 2004 by the Town of Wolcott.

- Confirmation that there have been no changes in zoning or expected land use that would allow for residential use of 1 Nutmeg Valley Road or 15 Nutmeg Valley Road, which were the focus of EPA's soil investigations.

ATTACHMENT 1

TOWN OF WOLCOTT GROUNDWATER ORDINANCE #87

ORDINANCE
Filed MAY 6, 2004 #87

TOWN OF WOLCOTT
GROUNDWATER ORDINANCE

I. Title

This Ordinance shall be known and be cited as the Groundwater Ordinance of the Town of Wolcott.

II. Purpose

The purpose of this Ordinance is to protect the health, safety and general welfare of the residents of Wolcott by identifying an Institutional Control Zone ("ICZ") and prohibiting the extraction, consumption or utilization of groundwater from land located within the ICZ so as to prevent public exposure to contaminated groundwater. The boundaries of the ICZ are set forth on Figure 1 attached hereto.

III. Scope and Authority

Within the boundaries of the ICZ, comprised as set forth in this Ordinance, no groundwater shall be extracted, consumed or utilized from the ground. This Ordinance shall apply to such areas notwithstanding the provisions of any other Town ordinance previously adopted.

IV. Definition

Groundwater: All the water found beneath the surface of the ground. In this Ordinance the term "groundwater" also refers to the slowly moving subsurface water present in aquifers and recharge areas.

V. Regulations

For the purpose of this Ordinance, there is hereby established within the Town of Wolcott a certain ICZ area.

VI. Area Affected

The particular properties contained within the initial ICZ are located on or adjacent to Wolcott Road, Town Line Road and Nutmeg Valley Road and are identified as follows:

#64 Wolcott Road, n/f owned by National Die Company, Inc., P.O. Box 6281, Wolcott, Connecticut 06716, Assessors Map Plate No. 109, Lot #69 (including adjacent triangular shaped parcel), Unique ID# N0404400

#84 Wolcott Road, n/f owned by Anthony S. Moffo, 61 Kalko Drive, Wolcott, Connecticut 06716, Assessors Map Plate No. 109, Lot #32 and 3A, Unique ID# M0386800

#17 Town Line Road, n/f owned by Dolores Riollano, Trustee of The Joseph M. Macary Trust, 9 Oakdale Avenue, Waterbury, Connecticut 06708, Assessors Map Plate No. 109, Lot #76A and Lot #76B and part of Lot #76 (including adjacent triangular shaped parcels), Unique ID# M0340800

Nutmeg Valley Road, n/f owned by Stanley Sendzimir c/o Jones, Foster and Johnson, P.O. Box 3475, West Palm Beach, Florida 33402, and Jan Peter and The Vanda Sendzimir Revocable Trust c/o Robert B. Needham, Trustee, 5 Forbes Lane, Andover, MA 01810 (Vacant Land) Assessors Map Plate No. 109, Lot #67-76, Unique ID# S0503900

#1 Nutmeg Valley Road, n/f owned by Thomas A. Gianni, Jr. and Carmen Gianni d/b/a Nutmeg Valley Associates, 1 Nutmeg Valley Road, Wolcott, Connecticut 06716, Assessors Map Plate No. 109, Lot #33, Unique ID# G0214400

#9 Nutmeg Valley Road, n/f owned by Barney H. Newsome, 178 Scott Road, Prospect, Connecticut 06712, Assessors Map Plate No. 109, Lot #34A, Unique ID# N0406100

Nutmeg Valley Road, n/f owned by Theodore Iorio, 15 Nutmeg Valley Road, Wolcott, Connecticut 06716, Assessors Map Plate No. 109, Lot #35, Unique ID# I0264300

#15 Nutmeg Valley Road, n/f owned by Nutmeg Screw Machine Products, Inc., P.O. Box 1470, Waterbury, CT 06720, Assessors Map Plate No. 109, Lot #34, Unique ID# N0410300

The referenced assessors maps are on file at the Office of the Assessor of the Town of Wolcott and are those bearing the following identification (as amended through the date of adoption of this Ordinance):

"Property Maps of the Town of Wolcott, Conn. Plate No. 109, Scale 1" = 200', April, 1958 Prepared by Vernon Graphics, Inc. Mt. Vernon, N.Y."

VII. Use Regulations

Within the ICZ, these regulations shall apply:

A. The following uses are prohibited in the ICZ: the extraction, consumption or utilization of groundwater for any purposes, including residential wells; provided, however, that groundwater in the ICZ may be removed and tested for purposes of evaluating groundwater quality only.

B. All properties within the ICZ shall abandon all existing groundwater wells (except groundwater monitoring wells) in accordance with the provisions of the General Statutes and Regulations of the State of Connecticut and the

regulations of the Chesprocott Health District, within ninety (90) days of the effective date of this ordinance.

C. All properties within the ICZ that contain any structures, (residential, commercial or industrial) shall connect to the existing public water supply systems within ninety (90) days of the effective date of this Ordinance.

D. This Ordinance shall not apply to any investigative or monitoring well installed or required to be installed, by any federal, state or local governmental authority.

VIII. Violations

A. The Town of Wolcott may institute or cause to be instituted, in the name of the Town, any and all actions, legal and equitable, that shall be appropriate or necessary for the enforcement of the provisions of this ordinance. A photograph or video of the removal and/or use of groundwater, properly authenticated, shall constitute prima facie evidence of a violation.

B. In addition, any person, firm or corporation, being the owner or occupant of, or having control or the use of land within the ICZ who is found to violate any provision of this Ordinance, shall be guilty of a civil violation and upon conviction thereof, shall be punished by a fine of $100.00. Each day such violation is permitted to exist after notification thereof shall constitute a separate offense. Such persons shall also be liable for any court costs and reasonable attorneys fees incurred by the Town of Wolcott to enforce this Ordinance.

IX. Effective Date

This Ordinance shall take effect on the twenty first day following publication.

Approved by the Town Council of the Town of Wolcott on the 13th day of APRIL, 2004.

George Babcock, Chairman,
Wolcott Town Council

DATE APRIL 13, 2004

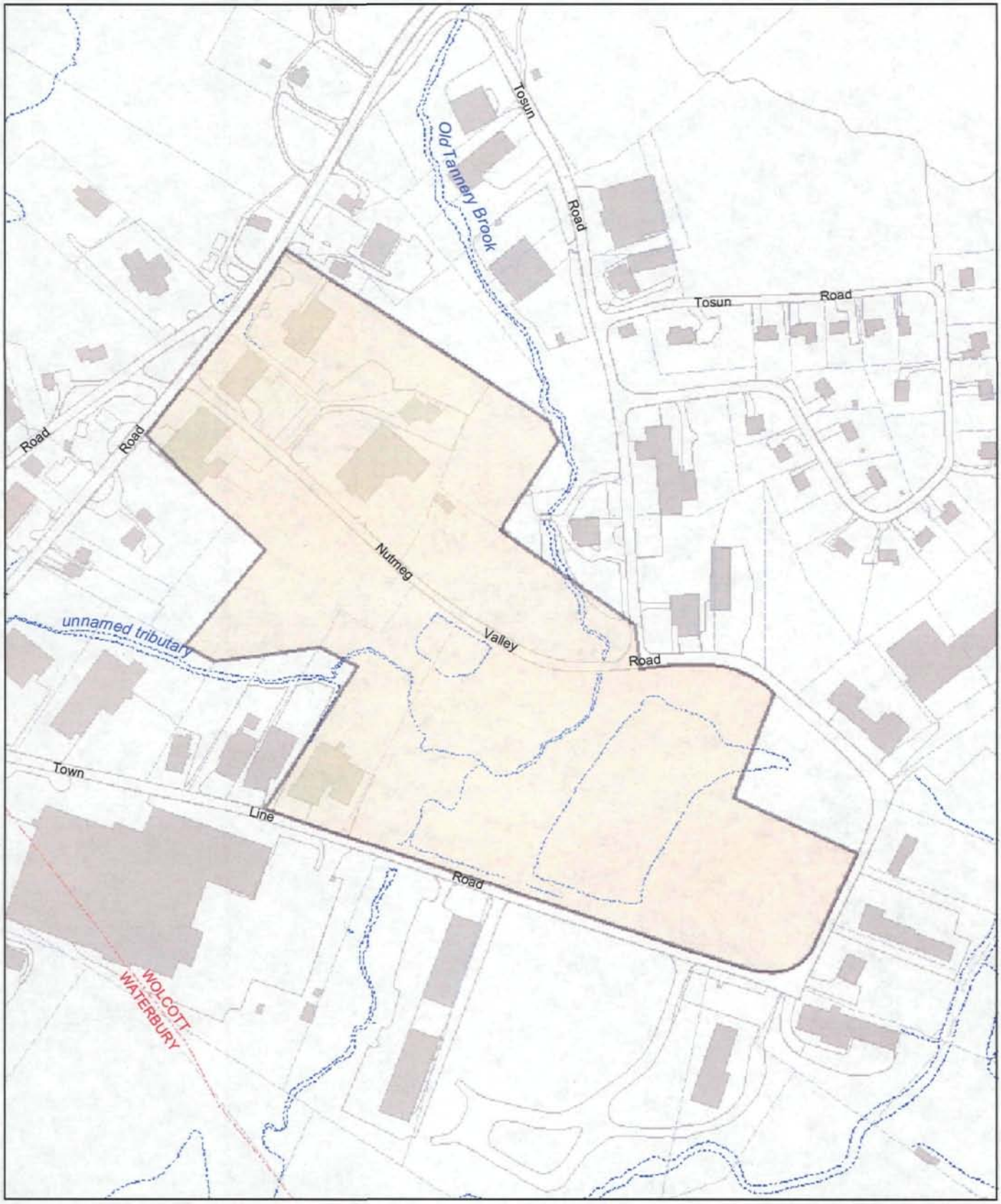
Thomas G. Dunn
Mayor, Town of Wolcott

DATE 4-14 ,2004

Date Published: APRIL 15th, 2004

Elaine King
Wolcott Town Clerk

Effective Date: MAY 6th, 2004 DATE May 6, 2004



Institutional Control Zones, Figure 1

Nutmeg Valley Road Site

Wolcott, CT

This map produced by the EPA New England GIS Center
5-March-2004

EPA United States Environmental Protection Agency New England

ATTACHMENT 2

TOWN OF WOLCOTT RE-CERTIFICATION LETTER

THOMAS G. DUNN
MAYOR

OFFICE OF THE MAYOR

TOWN OF WOLCOTT

September 10, 2009

Ms. Karen Lumino
US Environmental Protection Agency
Region 1
1 Congress Street, Ste. 1100
Boston, MA 02114-2023

RE: Nutmeg Valley Road, Town of Wolcott
Groundwater Ordinance Compliance

Dear Ms. Lumino:

This letter shall certify that there continues to be full compliance with the Town of Wolcott Groundwater Ordinance #87.

If any further documentation or assurances are needed, please feel free to contact me.

Very truly yours,

Thomas G. Dunn
Mayor, Town of Wolcott

10 KENEA AVENUE • WOLCOTT, CONNECTICUT 06716 • PHONE: (203) 879-8100 • FAX: (203) 879-1542
An Equal Opportunity Employer

ATTACHMENT 3

LIST OF DOCUMENTS REVIEWED / REFERENCES

Tetra Tech NUS, Inc., 2001. *Draft Final Ecological Risk Assessment, RI/FS, Nutmeg Valley Road, Wolcott, CT.* Prepared for EPA Region 1. November 2001.

Tetra Tech NUS, Inc., 2002a. *Draft Data Evaluation, RI/FS, Nutmeg Valley Road, Wolcott, CT.* Prepared for EPA Region 1. February 2002.

Tetra Tech NUS, Inc., 2002b. *Draft Final Human Health Risk Assessment, RI/FS, Nutmeg Valley Road, Wolcott, CT..* Prepared for EPA Region 1. February 2002, with March 2002 modifications.

Tetra Tech NUS, Inc., 2002c. *Draft Data Evaluation Addendum, RI/FS, Wolcott, CT.* Prepared for EPA Region 1. December 2002.

Tetra Tech NUS, Inc., 2005. *Draft Data Evaluation Addendum 2, Remedial Investigation/Feasibility Study, Nutmeg Valley Road, Wolcott, Connecticut.* Prepared for EPA Region 1. July 2005.

United States Environmental Protection Agency, 1992. *Framework for Ecological Risk Assessment. EPA/630/R-92/001.* February 1992.

United States Environmental Protection Agency, 1997. *Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments. EPA 540-R-97-006.* June 1997.

United States Environmental Protection Agency, 1998. *Guidelines for Ecological Risk Assessment. Risk Assessment Forum. Washington, D.C. EPA/630/R-95/002F.* April 1998.

United States Environmental Protection Agency, 2002. *Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils.* OSWER. EPA 530-F-02-052. November 2002.

United States Environmental Protection Agency, 2004. *Record of Decision, Nutmeg Valley Road Superfund Site, Wolcott, CT.* September 2004.

United States Environmental Protection Agency, 2008. *ECO Update/Groundwater Forum Issue Paper – Evaluating Groundwater/Surface Water Transition Zones in Ecological Risk Assessments.* OSWER Publication 9285.6-17, EPA-540-R-06-072. July 2008.

United States Geological Survey (USGS). 1997. *Preliminary Hydrogeologic Assessment of a Ground-Water Contamination Area in Wolcott, Connecticut.* Open-file Report 97-219.

United States Geological Survey (USGS). 1999. *Hydrogeology and Water Quality of the Nutmeg Valley Area, Wolcott and Waterbury, Connecticut.* Water-Resources Investigations Report 99-4081.

ATTACHMENT 4

SITE INSPECTION FORM

Nutmeg Valley Road Superfund Site
Five-Year Review Site Inspection Checklist

I. SITE INFORMATION

Site name: Nutmeg Valley Road Superfund Site	**Date of inspection:** 4/16/09 Karen Lumino, EPA RPM Rick Sugatt, EPA human-health risk assessor Cornell, Rosiu, EPA ecological risk assessor
Location and Region: Wolcott, CT/Region 1	**EPA ID:** CTD 980669261
Agency, office, or company leading the five-year review: OSRR/EPA/Region 1	**Weather/temperature:** Sunny, 55-60°F

Remedy Includes: (Check all that apply)

- ☐ Landfill cover/containment
- ☐ Access controls
- ☐ Institutional controls
- ☐ Groundwater pump and treatment
- ☐ Surface water collection and treatment
- ☐ Monitored natural attenuation
- ☐ Groundwater containment
- ☐ Vertical barrier walls
- ☒ Other No further actions under CERCLA

Attachments: ☐ Inspection team roster attached ☐ Site map attached

II. INTERVIEWS

1. **Local regulatory authorities and response agencies** (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply.

Agency Chesprocott Health District
Contact Lorraine DeNicola — Inspector — 10/9/08 — 203-272-2761
Name — Title — Date — Phone no.
Problems; suggestions; ☐ Report attached None

Agency Town of Wolcott, CT
Contact Thomas Dunn — Mayor — 4/16/09 — 203-879-8100
Name — Title — Date — Phone no.
Problems; suggestions; ☐ Report attached None

Agency _____
Contact _____ — _____ — _____ — _____
Name — Title — Date — Phone no.
Problems; suggestions; ☐ Report attached _____

2. **Other interviews** (optional) ☐ Report attached.

None

III. ON-SITE DOCUMENTS & RECORDS VERIFIED ☐ Applicable ☒ N/A

IV. O&M COSTS ☐ Applicable ☒ N/A

V. ACCESS AND INSTITUTIONAL CONTROLS ☒ Applicable ☐ N/A

A. Fencing

1. **Fencing damaged** ☐ Location shown on site map ☐ Gates secured ☒ N/A
   Remarks _____

B. Other Access Restrictions

1. **Signs and other security measures** ☐ Location shown on site map ☒ N/A
   Remarks _____

C. Institutional Controls (ICs)

1. **Implementation and enforcement**
   Site conditions imply ICs not properly implemented ☐ Yes ☐ No ☒ N/A
   Site conditions imply ICs not being fully enforced ☐ Yes ☐ No ☒ N/A

   Type of monitoring (*e.g.*, self-reporting, drive by) _____
   Frequency _____
   Responsible party/agency _____
   Contact _____ _____ _____ _____
   Name Title Date Phone no.

   Reporting is up-to-date ☐ Yes ☐ No ☒ N/A
   Reports are verified by the lead agency ☐ Yes ☐ No ☒ N/A

   Specific requirements in deed or decision documents have been met ☒ Yes ☐ No ☐ N/A
   Violations have been reported ☐ Yes ☒ No ☐ N/A
   Other problems or suggestions: ☐ Report attached

   None

2. **Adequacy** ☒ ICs are adequate ☐ ICs are inadequate ☐ N/A
Remarks

D. General

1. **Vandalism/trespassing** ☐ Location shown on site map ☒ No vandalism evident
Remarks

2. **Land use changes on site** ☒ N/A
Remarks

3. **Land use changes off site** ☒ N/A
Remarks

VI. GENERAL SITE CONDITIONS

A. Roads ☐ Applicable ☒ N/A

1. **Roads damaged** ☐ Location shown on site map ☐ Roads adequate ☐ N/A
Remarks

B. Other Site Conditions

Remarks

VII. LANDFILL COVERS ☐ Applicable ☒ N/A

VIII. VERTICAL BARRIER WALLS ☐ Applicable ☒ N/A

IX. GROUNDWATER/SURFACE WATER REMEDIES ☐ Applicable ☒ N/A

X. OTHER REMEDIES ☐ Applicable ☒ N/A

XI. OVERALL OBSERVATIONS

A. Implementation of the Remedy

Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).

Town of Wolcott Groundwater Ordinance #87 which prohibits all uses of groundwater in the area with elevated manganese is still in effect, as certified during the RPMs interview with Mayor Thomas Dunn.

B. Adequacy of O&M

Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.

N/A

C. Early Indicators of Potential Remedy Problems

Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future.

None

D.	**Opportunities for Optimization**
	Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy. N/A

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Greenhouse On Superfund Site Nearly Done

$2M Greenhouse Will Be 18,000 Square Feet, Man Says

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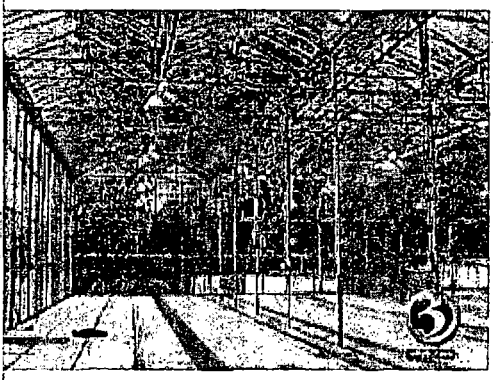

Video: Giant Greenhouse Constructed On Superfund Site

WOLCOTT, Conn. -- A greenhouse is being built in Wolcott on a superfund site that was cleaned up after tons of pollutants were dumped there for more than 20 years.

Those connected to the project said the climate-controlled, 18,000-square-foot building will cost about $2 million.

"I believed in the property," said John Chiarella Jr., of Ultimate Services. "I believed in the town, and that's why I just -- No one puts this kind of money in and leaves. There's a lot of investment here."

Ultimate Services, among other things, rents, sells, stores and supplies lemon and orange trees and date palms for parties or poolsides, for the weekend or summer.

"What we do is we take plants --palm trees and citrus trees -- we put them out in the summer, and then we take them from our clients and bring them back and store them," Chiarella said. "People get what they want, and we supply them."

To store a 25 foot palm tree, he said, you need a tall space.

"We'll have this whole area filled with big palm trees and citrus trees, and they'll go from the bottom and touch the lights," Chiarella said.

Ultimate Services, which will also be growing plants, had been using several greenhouses around the state. The new one will be fully automated, Chiarella said, from the retractable panels on the roof to the automated watering system.

And people will even be able to look in from the street, he said.

"And now I have all glass in the front where they're going to be able to see everything in there," Chiarella said. "There will be a lot of color, I mean, look at the area. It's commercial, it's shops and everything. This is probably the prettiest building around, I think."

Last-minute work on the greenhouse is just about wrapped up, Chiarella said. Plants and trees and everything else should be arriving soon, he said.

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